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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/798,202

03/08/2004

Richard Blackmore

V-043

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7590

05/25/2006

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EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/798,202

Applicant(s)

BLACKMORE ET AL.

Examiner

Justin R. Fischer

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 and 45-49 is/are pending in the application.
- 4a) Of the above claim(s) 1-15, 21-29 and 34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-20, 30-33 and 45-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 102204.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The indicated allowability of claims 16-20 is withdrawn in view of the newly discovered reference(s) to Kamiyama. Rejections based on the newly cited reference(s) follow.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiyama (JP 6-320624, newly cited) and further in view of Nimke (GB 2,181,507, of record). A machine translation of Kamiyama is provided.

Kamiyama discloses a pipe rehabilitation method comprising applying liners 4 and 5 and injecting a chemical reactant or foam grout 3 into the ground (Paragraphs 10 and 11). In this instance, though, Kamiyama is completely silent with respect to the manner in which liners 4, 5 are provided in the branch pipe 2. In any event, the liner installation method of the claimed invention represents a well-known and conventional installation technique, as shown for example by Nimke. In particular, Nimke discloses a method of lining a pipeline comprising forming a coiled resilient member (support), inserting said coiled resilient member into an interior annulus of a pipe, releasing a tension applied to the support (via adhesive in overlapping areas), and expanding said member to contact the inner surface of the pipe, wherein said member has a resting

Art Unit: 1733

diameter that is greater than the diameter of the pipe (Page 1, Lines 100-125 and Page 3, Lines 88+). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the well known and conventional liner installation technique disclosed by Nimke in the method of Kamiyama. It is emphasized that Kamiyama is completely silent with respect to the method by which the liner is installed.

As to claim 17, the method of Kamiyama includes the use of a foam grout (polyurethane based) and one of ordinary skill in the art at the time of the invention would have recognized such a foam to include closed cell foams as they are consistent with foam materials used in the industry, there being no conclusive showing of unexpected results to establish a criticality for a closed cell foam.

Regarding claim 18, the foam grout of Kamiyama functions in the same capacity as that of the reactant in the claimed invention.

With respect to claim 19, the foam grout of Kamiyama is a polyurethane.

As to claim 20, the expandable support or pipe liner 4 restricts the flow of foam grout into the main pipe.

4. Claims 30-32, and 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiyama and further in view of Strand (US 4,768,562, of record) and Nimke.

Kamiyama discloses a pipe rehabilitation method comprising applying liners 4 and 5 and injecting a chemical reactant or foam grout 3 into the ground (Paragraphs 10 and 11). In this instance, though, Kamiyama is completely silent with respect to the

Art Unit: 1733

manner in which liners 4, 5 are provided in the branch pipe 2. In any event, the liner installation method of the claimed invention represents a well-known and conventional installation technique, as shown for example by Strand. In particular, Strand teaches a pipe relining method comprising forming a coilable and expandable support or pipe liner, coiling said support, inserting said support into an interior annulus of a pipe, releasing a tension applied to said support (due to initial heating), and expanding said support against the wall of the pipe (Column 2, Lines 25-40 and Lines 54+). In regards to the diameter of the support in a relaxed state, Strand teaches that the outer diameter of the support is "substantially equal" to the inner diameter of the pipe (Column 2, Lines 25-32). This language would have been recognized as including embodiments in which the support has a diameter that is slightly less than and greater than the pipe diameter, wherein each of these embodiments are well recognized in the pipe lining industry. Nimke expressly evidences the well known use of similar, coilable pipe liners having relaxed diameters greater than the associated pipe diameter. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the support with a larger diameter than the pipe.

Furthermore, in regards to inserting the support into the pipe in a coiled state, Strand does teach that the support is coiled for storage and transportation (Column 1, Lines 45-51). While it is unclear if the support or liner is installed in this coiled state, it is well known to position liners within pipes in such a manner, as shown for example by Nimke. McGuire and Weickmann additionally evidence the recognized technique in which the liner is inserted into the pipe in a deformed state. Thus, one of ordinary skill

Art Unit: 1733

in the art at the time of the invention would have found it obvious to position the support or liner of Strand within the pipe in a coiled state as it is consistent with the common technique in the pipe lining industry. It is emphasized that the liner of Strand is formed into a coiled state but it is unclear if the liner is positioned within the pipe in this state- in view of the above noted references, though, the formation of a coiled liner would have been well within the purview of one of ordinary skill in the art at the time of the invention. It is noted that such a coiling technique is seen to constitute a "tension winding" step as required by claims 30-33.

Furthermore, in regards to claim 30, the liner of Strand includes a fiber lattice that is impregnated with a thermoset or thermoplastic resin, wherein said resin is partially cured or B-staged (Column 2, Lines 25-66)- complete cure of the liner occurs after the liner is positioned in the existing pipe(s) (Column 3, Lines 5-15).

As to claims 31 and 32, Strand teaches a method in which electrically conductive fibers (e.g. conductive fibers) are included in the liner or support and electrical current, from a power source, is directed through said fibers (Column 2, Lines 35-45 and Column 3, Lines 1-10). The reference expressly states that the heat is formed by electrical resistance heating (Column 3, Lines 1-5).

As to claims 45 and 48, the foam grout of Kamiyama is a polyurethane.

With respect to claims 46 and 49, the polyurethane foam grout of Kamiyama includes a thermosetting resin (Paragraph 11 of machine translation). While the reference fails to expressly suggest the use of an epoxy resin, epoxy resin represents one of the most common, if not the most common, thermosetting resins in a wide variety

Art Unit: 1733

of industries, including the pipe lining industry. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to include an epoxy resin in the polyurethane foam grout of Kamiyama.

5. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiyama, Strand, and Nimke as applied in claim 30 above and further in view of either one of JP 1-221222 or JP 04147834. In describing the "thermally responsive material", Strand generally suggests the use of a polymerizable resin 18, such as a thermoplastic or thermoset resin (Column 2, Lines 30-35). While the reference fails to expressly suggest the use of an ester, esters constitute well-known and conventional thermosetting resins that are commonly used in the pipe lining industry, as shown for example by JP '222 and JP '834. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious any of the well known and conventional resins as each of them is suitable for pipe relining methods.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 16-20, 30-33, and 45-49 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

Art Unit: 1733

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Justin Fischer

May 23, 2006